

c) optionally measuring the ionic concentration of calcium flux.

2. (Amended) A composition comprising a purified peptide, wherein the composition binds calcium ions and transmits measurable energy, wherein the amount of energy depends on the quantity of calcium bound and the quantity of peptide in the composition in absence of any light excitation.

3. (AMENDED) A purified polypeptide having the amino acid sequence of any one of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5, or SEQ ID NO: 6.

9. (AMENDED) A purified polynucleotide having the sequence of any one of SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10, SEQ ID NO: 11, or SEQ ID NO: 12.

15. (Amended) The composition according to claim 2, wherein the purified polypeptide has the amino acid sequence of any one of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5, or SEQ ID NO: 6.

18. (Amended) A method of screening *in vitro* for a molecule in a biological sample capable of modulating the energy in the composition of claim 2, wherein the molecule is contained in a reaction system, wherein the method comprises:

(a) detecting a modulation of the energy by comparison with a control sample containing the composition of claim 2 without the molecule to be tested; and

(c) optionally, determining the effective minimal concentration of the molecule capable of inhibiting or increasing the energy transfer of the composition.

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Q7  
19. (AMENDED) A culture containing a polynucleotide of claim 9, said culture as deposited at the C.N.C.M. and containing any one of the plasmids in deposit accession No. I-2507, I-2508, I-2509, I-2510, I-2511, I-2512, or I-2513.

Q8  
26. (AMENDED) A peptide linker that links a donor site to an acceptor site to permit a direct transfer of energy by chemiluminescence in a purified polypeptide wherein the polypeptide has a sequence as claimed in claim 3.

27. (AMENDED) A nucleotide linker having the nucleotide sequence of any one of SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 15, SEQ ID NO: 16, or SEQ ID NO: 17.

Q9  
32. (AMENDED) A polynucleotide linker, comprising the sequence of any one of SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 15, SEQ ID NO: 16, or SEQ ID NO: 17, wherein after translation, the polynucleotide linker links a donor site to an acceptor site to permit a direct transfer of energy by Chemiluminescence Resonance Energy Transfer (CRET) in the purified polypeptide of the composition in claim 2.

33. (AMENDED) A peptide linker of at least 5 amino acids comprising the amino acid sequence of any one of SEQ ID No: 18, SEQ ID NO: 19, SEQ ID NO: 20, SEQ ID NO: 21, or SEQ ID NO: 22.

Q10  
38. (AMENDED) A peptide linker comprising any one of SEQ ID No: 18, SEQ ID NO: 19, SEQ ID NO: 20, SEQ ID NO: 21, or SEQ ID NO: 22, wherein after translation, the linker links a donor site to an acceptor site to permit a direct transfer of energy in the presence of the purified polypeptide of the composition according to claim 2.

Q10

39. (AMENDED) A peptide linker according to claim 33, wherein the peptide linker has the capacity to stabilize a modified bioluminescent system *in vivo* and/or *in vitro*.

40. (AMENDED) A modified bioluminescent system comprising two bioluminescent proteins and a peptide linker according to claim 33.

Q11

42. (AMENDED) The modified bioluminescent system of claim 40 comprising aequorin protein and a GFP protein.

43. (AMENDED) A kit for measuring the transfer of energy *in vivo* or *in vitro* and containing at least one of the polypeptides of claim 3 and the reagents necessary for visualizing or detecting the transfer of energy in presence or in absence of a molecule of interest.

Q12

46. (AMENDED) The fusion protein as claimed in claim 45, wherein the LINKER comprises the following amino acids:

(Gly Gly Ser Gly Ser Gly Gly Gln Ser (SEQ ID NO: 25))<sub>n</sub>,

wherein n is 1-5.

Q13

53. (AMENDED) A polynucleotide encoding a fusion protein as claimed in claim 44.

Please add the following claims:

54. (NEW) A kit for measuring the transfer of energy *in vivo* or *in vitro* and containing at least one of the polynucleotide of claim 9 and the reagents necessary for visualizing or detecting the said transfer in presence or in absence of a molecule of interest.

Q14  
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